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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 09/980,075  | 01/04/2002  | Martin Bergenwall    | 4925-180PUS         | 5387             |
| 7590  | 10/24/2005  |                      | EXAMINER            |                  |
| Michael C Stuart<br>Cohen Pontani Lieberman & Pavane<br>551 Fifth Avenue Suite 1210<br>New York, NY 10176 |             |                      | YANG, LINA          |                  |
|   |             |                      | ART UNIT            | PAPER NUMBER     |
|   |             |                      | 2665                |                  |

DATE MAILED: 10/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/980,075

Applicant(s)

BERGENWALL, MARTIN

Examiner

Lina Yang

Art Unit

2665

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 November 2001.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-25 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed..  
6) ☒ Claim(s) 1-25 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 11/28/2001 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 11/28/2001.  
4) ☐ Interview Summary (PTO-413).  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Claim Objections***

1. Claim 22 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim 6. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim 22 recites "The system according to 6, wherein said network element (3) is an SGSN network element for performing header compression", which has the same limitations as recited in the parent claim 6, "The system according to claim 1, wherein said network element (3) is an SGSN network element for performing header compression".

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2665

2. Claims 1-5, 7-17 and 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Forslow (U. S. Patent No. 6,937,566 B1) in view of Ziegler et al (IEEE, Feb. 5, 1997, pages 410-418).

Regarding claims 1 and 11, Forslow teaches a packet data transmission network system (method) comprising: a receiver (1) (mobile host 12 in figs. 1 and 2); and a sender (2) (fixed terminal 18 in fig. 1 or an ISP 58 in fig. 2) for transmitting data packets to the receiver (1) through a packet data connection via a network element (3) (SGSN 50 in fig. 2), the network element (3) (SGSN 50 in fig. 2) is arranged to buffer data packets transmitted by the sender (2) ( col. 12 lines 22-33) and detect transmission conditions comprising radio conditions (col. 3 lines 68; col. 6 lines 1-10 and col. 12 lines 15-19).

Forslow differs from the claimed invention in that Forslow does not specifically teach that the receiver being arranged to acknowledge each received data packet by an acknowledgment message containing header data comprising a window size, the number of transmitted bytes for which the sender (2) has not received an acknowledgment from the receiver (1) being not allowed to exceed the window size; the said network element (3) is arranged to examine and modify the header data; and modify the window size according to the detected transmission conditions. However, Ziegler discloses a congestion avoidance mechanism using a BUC (Buffer Utilization Control) algorithm along with a RFCN (reverse feedback congestion notification) (fig. 1). More specifically, RFCN is using sliding window flow control. According to window flow control, the receiver transmits its available buffer size to the sender in a window-field in

the ACK-header. The BUC gateway uses queues (forward and backward queues in fig. 1) to store the packets transmitted from the sender and the ACKS to be received by the data-sender. If used in combination with RFCN, the BUC gateway calculates the window at the forward queue and sets the header field of ACKS at the corresponding backward queue to control the transmission rate of a data-sender (Abstract; sections 1.2 and 2.2 on page 411). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to include the receiver being arranged to acknowledge each received data packet by an acknowledgment message containing header data comprising a window size, the number of transmitted bytes for which the sender (2) has not received an acknowledgment from the receiver (1) being not allowed to exceed the window size; the said network element (3) is arranged to examine and modify the header data; and modify the window size according to the detected transmission conditions, as taught by Ziegler in the assembly of Forslow in order to provide better flow control to avoid the congestion.

Regarding claim 7, Forslow teaches a network element (3) (SGSN in fig. 2) in a packet data transmission network system, comprising: buffering means ( col. 12 lines 22-33) for buffering data packets transmitted by a sender (2) to a receiver (1) through a packet data connection, and modifying means for modifying the window size according to the detected transmission conditions (col. 3 lines 68; col. 6 lines 1-10 and col. 12 lines 15-19).

Forslow differs from the claimed invention in that Forslow does not specifically teach that the receiver being arranged to acknowledge each received data packet by an acknowledgment message containing header data comprising a window size, the number of transmitted bytes for which the sender (2) has not received an acknowledgment from the receiver (1) being not allowed to exceed the window size; the said network element (3) is arranged to examine and modify the header data; and modify the window size according to the detected transmission conditions. However, Ziegler discloses a congestion avoidance mechanism using a BUC (Buffer Utilization Control) algorithm along with a RFCN (reverse feedback congestion notification) (fig. 1). More specifically, RFCN is using sliding window flow control. According to window flow control, the receiver transmits its available buffer size to the sender in a window-field in the ACK-header. The BUC gateway uses queues (forward and backward queues in fig. 1) to store the packets transmitted from the sender and the ACKS to be received by the data-sender. If used in combination with RFCN, the BUC gateway calculates the window at the forward queue and sets the header field of ACKS at the corresponding backward queue to control the transmission rate of a data-sender (Abstract; sections 1.2 and 2.2 on page 411). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to include the receiver being arranged to acknowledge each received data packet by an acknowledgment message containing header data comprising a window size, the number of transmitted bytes for which the sender (2) has not received an acknowledgment from the receiver (1) being not allowed to exceed the window size; the said network element (3) is arranged to

examine and modify the header data; and modify the window size according to the detected transmission conditions, as taught by Ziegler in the assembly of Forslow in order to provide better flow control to avoid the congestion.

Regarding claims 2 and 8, the modified assembly of Forslow and Ziegler further teaches that the network element (3) is arranged to modify the window size to a lower value when it detects a decreasing quality (longer q-length) of transmission conditions (Ziegler: last paragraph of sections 2.1 on page 412).

Regarding claims 3, 12, 9 and 23, the modified assembly of Forslow and Ziegler further teaches that the network element (3) is arranged to quit modifying the window size when it detects that the quality of transmission conditions is increasing and allow the receiver to set the window size normally (by default).

Regarding claims 4, 10, 13, 14, 24 and 25, the modified assembly of Forslow and Ziegler further teaches that the transmission conditions detected by said network element (3) comprise buffering conditions of data packets at said network element (3) (Ziegler: first paragraph in section 2.1 on page 411).

Regarding claims 5, 15-17, the modified assembly of Forslow and Ziegler further teaches that the packet data connection is a TCP/IP connection (Forslow: col. 2 lines 56-65).

3. Claims 6, 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Forslow (U. S. Patent No. 6,937,566 B1) in view of Ziegler et al (IEEE, feb. 5, 1997, pages 410-418), and further teaches that in view of Chuah (U. S. Patent No. 6,839,339 B1).

Regarding claims 6, 18-21, the modified assembly of Forslow and Ziegler further teaches that the network element (3) is an SGSN network element (Forslow: SGSN in figs. 1 and 2).

The modified assembly of Forslow and Ziegler differs from the claimed invention in that Forslow does not specifically teach that the SGSN performs header compression. However, it's well known in the art that TCP/IP and RTP/UDP/IP headers are compressed to reduce the byte size for transmission, and SGSN provides the service. For example, Chuah teaches that a SGSN performs header compression(col. 4 lines 24-58). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to include a SGSN performs header compression, as taught by Chuah in the modified assembly of Forslow and Ziegler in order to reduce the size of the data to be transmitted.



Art Unit: 2665

***Conclusion***

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lina Yang whose telephone number is (571)272-3151. The examiner can normally be reached Monday through Thursday between 8:00 a.m. and 7:00 p.m. eastern standard time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571)272-3155. The fax phone number for the organization where this application or proceeding is assigned is 517-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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